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Network Working Group
Request for ~~Contract~~ #112
Comments

NIC 5816
Thomas O'Sullivan
RDS
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User/Server Site Protocol
Network HOST Questionnaire
(Reference RFC #106, NIC Note 5776)

Attached is a summary of the responses to the referenced questionnaire.

The questions involving terminal support were of interest to members of the User/Service Site Protocol Committee in its considerations of TELNET.

The summary points out some of the key differences between line-at-a-time and character-at-a-time (or both) in handling terminal support, especially with respect to control characters. The information may prove useful as background information to TELNET implementers.

If errors of interpretation of any sites' answer have occurred, please advise me at the following address so that I may update the chart.

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/law
Attachment

ARPA Network
User Terminal Support
(Ref RFC 106, NIC note 5776)

3-25-71
T. O'Sullivan [RDS]

System	Site	1 Line or Char	2 Terminal I/O Buffer IN OUT	3 End of Line Action (Newline) CR	LF	NL	CR+LF	4 Special Interrupt Actions	5 Terminals Supported		6 Internal Representation	7 Communication Modes	8 Internal Echo Mode	9 Error Detection	10 Punched Paper Tape Input
PDP 10 10/50	CMU	both (1)	80ch 80ch	Reflect CR+LF (2) Send line to process		N/A	like CR+LF	Control C interrupts running program 2nd Control C sends user to EXEC. If user pgm not running, 1st Control C returns to Exec.	TTY 33,35 DATEL	ASCII EBCD	7 bit ASCII	Full Duplex with/without Echo Half Duplex with Attention	Assumes Terminal wants ECHO (4)	NO	yes (3)
	CASE	both	72ch 72ch	"	"	"	"	"	TTY VT02 [DEC]	ASCII ASCII	7 bit ASCII	Full Duplex with/without ECHO	"	"	"
	HARVARD	both	80ch 80ch	"	"	"	"	"	TTY ARDS	ASCII ASCII	"	"	"	"	"
	SRAI	both	23 wds 23 wds	"	"	"	"	"	TTY Delta Data Charter	ASCII ASCII	"	"	"	"	"
PDP10/E	UTAH	both	dynamic buffer	"	Regular clear	"	like CR+LF	"	TTY 33,35	ASCII	"	"	"	"	NO
PDP 10 TENEX	B B N	both	64ch 64ch	"	No Special Action	"	"	All Control Char + rubout, Altmode etc Control C same as CMU	TTY 33,35,37	ASCII	"	All (5)	"	"	YES
	ARC	both	80ch 80ch	"	"	"	"	"	TTY 33,35,37 T.I. Exec port, Terminet	ASCII ASCII ASCII	"	Full Duplex with/without ECHO	"	"	"
PDP 10 DMCG	MAC	both	80ch 80ch	"	"	"	"	Control Z takes user up 1 level in job tree. Other interrupts application dependent	TTY 33,35,37 IMLAC ARDS	ASCII ASCII ASCII	7 bit ASCII	"	"	"	"
PDP10/6	SUAI	both	150ch 150ch	"	"	"	"	Same as CMU	TTY 33,35,37 IMLAC ARDS Data Disk Display	ASCII ASCII ASCII ASCII	"	Full Duplex with/without Echo	"	"	"
Sigma 7	UCLA	both	127ch 128ch	"	Equiv to CR		"	Break - pass control to upper level process	TTY 33,35,37 IMLAC Datapoint 3300	ASCII ASCII ASCII	EBCDIC [with an ASCII option]	"	" ?	"	NO

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360/75	UCSB	Char	unlimited	NA	NA	goes to new line	NA	:AESET:	Collier Fried		EBCDIC	Full Duplex no echo	NA	No	No
360/65	SDC	Line	104 in — determinate	Echo LF Send line to system	like any other	NA	like CR+LF	Break — Stop output or cancel pending input Echo CR CR — Wake up System if line starts with / otherwise send line to program	TTY Execuport	ASCII ASCII	EBCDIC	Half Duplex with break	NA	NO	NO
360/65 1500	RAND	both	large shared buffer pool	① line made send to Service Mode.		NA	like CR+LF	Rand terminal has Return, Control, and 44 Special Functions in addition to a pgm interrupt key	Videographics		EBCDIC	Full duplex with echo checking Char KB editor mode	NA	NO	NO
360/67 CP-CMS	LL	Line	130 130	NA	NA	RTN & LF, lock KB, pass line to process	NA	ATTN — Awake process ie: stop output and give control to keyboard INR & INT look like ATTN but are in char stream	2741	EBCD	EBCDIC	half duplex break & reverse bit	NA	NO	NA
MULTICS	MAC	Line	large shared bufferpool	TTY 37 No Action, 2741 NA	Idle NL NA	h/w like interrupt CR+ send buffered LF line to process		Break or Attention Takes user to supervisory level after interrupting running process. Break Same as MULTICS	2741, 1050, DATEL TTY 37	EBCD EBCA ASCII	ASCII 7 bits in 9 bit field	Half Duplex with break & Attention	NA	NO	NO
GE635 GE645	RADC	Line	Terminal dependent ← 80 → or ← 1196 →	Returns LF as line is interpreted	Treat interpret as text	tread LF as CR+LF	Treat as CR	Control A - escape from Timesharing, Control C attach to remote bank	TTY 33 35 37 Datanet 760 IBM 2741 IBM 1050	ASCII {MODIFIED ASCII EBCD "	7 bit ASCII in 9 bit field	Full Duplex Echo Half Duplex break & Reverse bit	NA	yes even parity	yes

① PDP 10's are considered to be both character at a time and line at a time since the hardware sends an interrupt for each character input, but whether or not action is taken depends on the process in control of that line. Some processes are line at a time, others character, UTAH has somewhat modified the operation, using a PDP8 front end.

② On the DEC 1050 Operating system, LF along with a number of other terminators such as ESC, ALT etc will cause a buffered line to be sent to the user process.

③ Punched paper tape support is generally available on the 10 to the terminal user, but usually not used. If input buffer fills up System will turn tape reader off instead of throwing away as it will for keyboard input.

④ On PDP 10's Control B will flip user into other mode for handling

⑤ TENEX provides through software control, support for all makes (See e.g. RFC 106